

WHAT IS CLAIMED IS:

1. A tag comprising:
 - (a) an inlay, said inlay comprising
 - (i) an antenna, and
 - (ii) a wireless communication device coupled to said antenna; and
 - (b) a plastic extrudate, said plastic extrudate encapsulating said antenna and said wireless communication device.
2. The tag as claimed in claim 1 wherein said wireless communication device is a radio frequency (RF) communication device.
3. The tag as claimed in claim 1 wherein said inlay further comprises a carrier sheet on which said antenna is disposed.
4. The tag as claimed in claim 3 wherein said antenna is printed onto said carrier sheet.
5. The tag as claimed in claim 1 further comprising a metallic reflector coupled to said plastic extrudate.
6. The tag as claimed in claim 5 wherein said metallic reflector is laminated onto an exterior surface of said plastic extrudate.
7. The tag as claimed in claim 1 further comprising a mounting adhesive coupled to said plastic extrudate.
8. The tag as claimed in claim 1 wherein said wireless communication device is in the form of an integrated circuit (IC) chip which is conductively bonded to said antenna.
9. The tag as claimed in claim 1 wherein said antenna is a bilaterally symmetrical dipole antenna.
10. The tag as claimed in claim 1 wherein said plastic extrudate is a unitary member.

11. The tag as claimed in claim 1 wherein said plastic extrudate comprises a top member and a bottom member, said top member and said bottom member cooperatively encapsulating said antenna and said wireless communication device.

12. A method of continuously manufacturing a plurality of tags, each tag comprising a plastic extrudate and an inlay surrounded by said plastic extrudate, said method comprising the steps of:

(a) providing a continuous supply of inlays, said continuous supply of inlays comprising a continuous carrier web, a plurality of antennae positioned on said continuous carrier web at spaced intervals and a wireless communication device coupled to each of said antennae,

(b) feeding said continuous supply of inlays into a cross-head extruder so as to yield a continuous block which includes said continuous supply of inlays surrounded by a plastic extrudate, and

(c) cutting said continuous block between successive antennae so as to yield individual tags.

13. The method of claim 12 further comprising, after said feeding step, the step of laminating a metallic reflector onto the underside of said continuous block.

14. The method of claim 12 further comprising, after said feeding step and before said cutting step, the step of cooling said continuous block.

15. The method of claim 12 further comprising the step of coupling a mounting adhesive to the underside of said continuous block.

16. A tag comprising:

(a) a plastic casing comprising

(i) a bottom member shaped to define a longitudinal cavity, and

(ii) a top member applied to said bottom member to at least partially enclose the longitudinal cavity, and

- (b) an inlay disposed within the longitudinal cavity, said inlay comprising,
 - (i) a carrier sheet,
 - (ii) an antenna disposed on said carrier sheet, and
 - (iii) a wireless communication device coupled to said antenna.

17. The tag as claimed in claim 16 wherein said wireless communication device is a radio frequency (RF) communication device.

18. The tag as claimed in claim 16 wherein said antenna is printed onto said carrier sheet.

19. The tag as claimed in claim 16 further comprising a metallic reflector coupled to said plastic casing.

20. The tag as claimed in claim 16 further comprising a mounting adhesive coupled to said plastic casing.

21. The tag as claimed in claim 16 wherein said wireless communication device is in the form of an integrated circuit (IC) chip which is conductively bonded to said antenna.

22. The tag as claimed in claim 16 wherein said antenna is a bilaterally symmetrical dipole antenna.

23. The tag as claimed in claim 16 wherein the longitudinal cavity extends the entire length of said bottom member.

24. The tag as claimed in claim 23 wherein the longitudinal cavity is generally U-shaped in longitudinal cross-section.

25. The tag as claimed in claim 16 wherein the top member is a flat sheet affixed to said bottom member.

26. The tag as claimed in claim 16 wherein the top member is a plug molded to said bottom member.

27. The tag as claimed in claim 16 wherein the longitudinal cavity extends only a portion of the length of said bottom member.

28. The tag as claimed in claim 27 wherein the longitudinal cavity is spaced inwardly from both ends of said bottom member.

29. A continuous supply of inlays comprising:

(a) a continuous web,

(b) a plurality of antennae disposed on the top surface of said continuous web at spaced intervals, and

(c) a plurality of wireless communication devices, each wireless communication device being coupled to a corresponding antenna.

30. The continuous supply of inlays of claim 29 wherein each of said plurality of wireless communication devices is a radio frequency (RF) communication device.

31. The continuous supply of inlays of claim 29 wherein said continuous web is constructed of a polymeric film selected from the group consisting of a polyester film, a polyethylene terephthalate film and a polyimide film.

32. The continuous supply of inlays of claim 29 wherein said plurality of antennae are printed onto the top surface of said continuous web.

33. The continuous supply of inlays of claim 29 wherein each wireless communication device is conductively coupled to a corresponding antenna.

34. A method of continuously manufacturing a plurality of tags, said method comprising the steps of:

(a) providing a single continuous strip which is shaped to include a continuous longitudinal cavity along its entire length,

(b) depositing a continuous supply of inlays into the continuous longitudinal cavity, said continuous supply of inlays comprising a carrier web, a plurality of antennae disposed on said carrier web at spaced intervals, and a wireless communication device coupled to each of said antennae,

(c) applying a cover over said continuous supply of inlays disposed within said single continuous strip, and

(d) cutting said cover, said continuous supply of inlays and said single continuous strip between successive antennae to yield individual tags.

35. The method of claim 34 further comprising, before said cutting step, the step of crimping said single continuous strip, said continuous supply of inlays and said cover at a location between successive antennae.

36. The method of claim 34 further comprising, before said cutting step, the step of laminating a metallic reflector onto the underside of said single continuous strip.

37. The method of claim 34 further comprising, before said cutting step, the step of coupling a mounting adhesive to the underside of said single continuous strip.

38. The method of claim 34 wherein said cover comprises a flat sheet affixed to said single continuous strip.

39. The method of claim 38 wherein at least one of said flat sheet and said single continuous strip are formed by extrusion molding.

40. The method of claim 34 wherein said cover comprises a plug molded onto said single continuous strip.

41. The method of claim 40 wherein said plug is formed by pouring molten plastic into said longitudinal cavity over said continuous supply of inlays and then allowing said molten plastic to harden.

42. The method of claim 40 wherein said plug is formed by pouring a curable polymer into said longitudinal cavity over said continuous supply of inlays and then curing said curable polymer.

43. The method of claim 40 wherein said plug is formed by pouring a solvent-borne polymer into said longitudinal cavity over said continuous supply of inlays and then allowing said solvent-borne polymer to dry.

44. A method of continuously manufacturing a plurality of tags, each tag comprising a plastic casing and an inlay encased within said plastic casing, said method comprising the steps of:

(a) providing a single continuous strip having a plurality of cavities at spaced intervals,

(b) depositing an inlay within each cavity in said single continuous strip, each inlay comprising a carrier sheet, an antenna disposed on said carrier sheet and a wireless communication device coupled to said antenna,

(c) applying a single continuous web to said single continuous sheet to enclose each inlay within its corresponding cavity, and

(d) cutting said single continuous strip and said single continuous web between successive cavities to yield individual tags.

45. The method of claim 44 further comprising, after said enclosing step and before said cutting step, the step of crimping said single continuous strip and said single continuous web between successive cavities.

46. The method of claim 44 further comprising the step of laminating a metallic reflector onto the underside of said single continuous strip.

47. The method of claim 44 further comprising the step of coupling a mounting adhesive to the underside of said single continuous strip.

48. The method of claim 44 wherein said single continuous strip is formed by extruding a sheet of material and then forming cavities in said sheet of material by thermoforming and wherein said single continuous web is formed by extrusion molding.

49. A method of continuously manufacturing a plurality of tags, each tag comprising a plastic casing and an inlay encased within said plastic casing, said method comprising the steps of:

(a) providing a single continuous member having a plurality of cavities at spaced intervals,

(b) depositing an inlay within each cavity in said single continuous strip, each inlay comprising a carrier sheet, an antenna disposed on said carrier sheet and a wireless communication device coupled to said antenna,

(c) applying a plug over each inlay to enclose said inlay within its corresponding cavity, and

(d) cutting said single continuous strip between successive cavities.

50. The method of claim 49 wherein said plug is formed by pouring molten plastic into said cavity over said inlay and then allowing said molten plastic to harden.

51. The method of claim 49 wherein said plug is formed by pouring a curable polymer into said cavity over said inlay and then curing said curable polymer.

52. The method of claim 49 wherein said plug is formed by pouring a solvent-borne polymer into said cavity over said inlay and then allowing said solvent-borne polymer to dry.

53. The method of claim 49 wherein said single continuous strip is formed by extruding a sheet of material and then forming cavities in said sheet of material by thermoforming.

54. The method of claim 49 wherein said cutting step is performed after said plug applying step.